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The Patent Office  
Concept House  
Cardiff Road  
Newport  
South Wales  
NP10 8QQ

GB04/4077

**PRIORITY DOCUMENT**  
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RULE 17.1(a) OR (b)

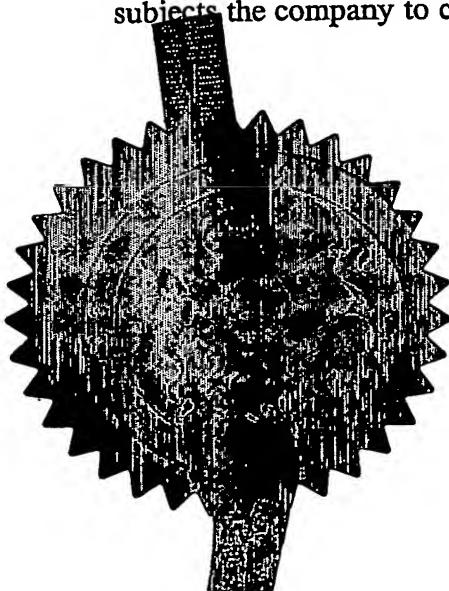
I, the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4) of the Deregulation & Contracting Out Act 1994, to sign and issue certificates on behalf of the Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as originally filed in connection with the patent application identified therein.

I also certify that the attached copy of the request for grant of a Patent (Form 1/77) bears an amendment, effected by this office, following a request by the applicant and agreed to by the Comptroller-General.

In accordance with the Patents (Companies Re-registration) Rules 1982, if a company named in this certificate and any accompanying documents has re-registered under the Companies Act 1980 with the same name as that with which it was registered immediately before re-registration save for the substitution as, or inclusion as, the last part of the name of the words "public limited company" or their equivalents in Welsh, references to the name of the company in this certificate and any accompanying documents shall be treated as references to the name with which it is so re-registered.

In accordance with the rules, the words "public limited company" may be replaced by p.l.c., plc, P.L.C. or PLC.

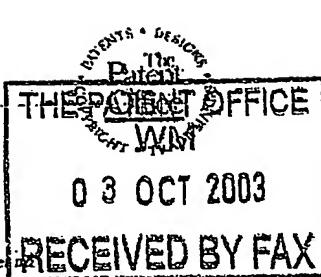
Re-registration under the Companies Act does not constitute a new legal entity but merely subjects the company to certain additional company law rules.



Signed *Andrew Gengey*  
Dated 6 December 2004

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Patents Form 1/77

Patents Act 1977  
(Rule 16)03 OCT 03 ER41992-2 043216  
P01/7700 0300-0323178.4**Request for grant of a patent**

(See the notes on the back of this form. You can also get explanatory leaflets from the Patent Office to help you fill in this form.)

The Patent Office

Cardiff Road  
Newport  
South Wales  
NP10 8QQ

1. Your reference

PLD

2. Patent application number

(The Patent Office will fill in this part)

0323178.4

- 3 OCT 2003

3. Full name, address and postcode of the or of each applicant (underline all surnames)

Gunther Rogoll and  
Renato Kitchener  
20 Elmcroft Place  
Westergate  
West Sussex  
PO20 3XL8727257001  
7466097002

Patents ADP number (if you know it)

If the applicant is a corporate body, give the country/state of its incorporation

4. Title of the invention

**Physical layer diagnostics.**

5. Name of your agent (if you have one)

"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

Ren Kitchener  
20 Elmcroft Place  
Westergate  
West Sussex  
PO20 3XL8727240001  
C. F. Redfern & Co  
7 Simple Lane  
Holborn  
London  
WC1V 7OF 14/2002

Patents ADP number (if you know it)

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (if you know it) the or each application number

Country      Priority application number  
(if you know it)      Date of filing  
(day / month / year)

7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application      Date of filing  
(day / month / year)8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (Answer 'Yes' if:  
a) any applicant named in part 3 is not an inventor, or  
b) there is an inventor who is not named as an applicant, or  
c) any named applicant is a corporate body.  
See note (d))**BEST AVAILABLE COPY**

Patents Form 1/77

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9. Enter the number of sheets for any of the following items you are filing with this form.  
Do not count copies of the same document.

Continuation sheets of this form

Description 1

Claim(s)

Abstract

Drawing(s)

1 only

10. If you are also filing any of the following, state how many against each item.

Priority documents

Translations of priority documents

Statement of inventorship and right to grant of a patent (Patents Form 7/77)

Request for preliminary examination and search, (Patents Form 9/77)

Request for substantive examination  
(Patents Form 10/77)

Any other documents  
(please specify)

11.

I/We request the grant of a patent on the basis of this application.

Signature

Date 03 Oct 03

12. Name and daytime telephone number of person to contact in the United Kingdom Ren Kitchener 01243 545 595

Warning

After an application for a patent has been filed, the Comptroller of the Patent Office will consider whether publication or communication of the invention should be prohibited or restricted under Section 22 of the Patents Act 1977. You will be informed if it is necessary to prohibit or restrict your invention in this way. Furthermore, if you live in the United Kingdom, Section 23 of the Patents Act 1977 stops you from applying for a patent abroad without first getting written permission from the Patent Office unless an application has been filed at least 6 weeks beforehand in the United Kingdom for a patent for the same invention and either no direction prohibiting publication or communication has been given, or any such direction has been revoked.

Notes

- a) If you need help to fill in this form or you have any questions, please contact the Patent Office on 08459 500505.
- b) Write your answers in capital letters using black ink or you may type them.
- c) If there is not enough space for all the relevant details on any part of this form, please continue on a separate sheet of paper and write "see continuation sheet" in the relevant part(s). Any continuation sheet should be attached to this form.
- d) If you have answered 'Yes' Patents Form 7/77 will need to be filed.
- e) Once you have filled in the form you must remember to sign and date it.
- f) For details of the fee and ways to pay please contact the Patent Office.

Patents Form 1/77

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**DESCRIPTION PAGE 1 of 1**

**Fieldbus physical layer and power supply diagnostics**

A diagnostic system 17 is utilized to provide diagnostic data for an operator via a digital and/or analogue interface 16 and/or via visual means 14.

A modular system comprising one or more simplex and/or redundant power supplies and/or conditioners 3, 5 and a replaceable segment autonomous diagnostic system 17 contained within, or on, a modular backplane 15, with digital and/or analogue link 16 and/or 19 to other said systems as an option.

The diagnostic system 17 may derive power from the bulk power supply 1 and/or from other external power source.

Physical layer diagnostic means may comprise one or more of the following:

Over/under termination warning and/or alarm, noise/ripple level warning and/or alarm, signal level warning and/or alarm, signal bias and/or jitter and/or ringing warning and/or alarm, signal distortion warning and/or alarm, signal attenuation warning and/or alarm, cross talk warning and/or alarm, unbalance warning and/or alarm, earth leakage detection and/or alarm.

Or any hardware related alarms might include one or more of the following:

Bulk supply 1 voltage warning and/or alarm, segment 8a to 8n short circuit warning and/or alarm, any module 3, 5, 17 failure warning and/or alarm. Quiescent current warning and/or alarm including rate of change.

Diagnostics may include Fourier analysis, trending, data logging and other statistical analysis/reporting.

Diagnostics may be derived from one ore more direct and/or indirect common mode 2, 4, 6 and/or differential mode 7 injection and/or detection 9, 10, 11, 12, 13, 18 methods.

Part of the diagnostic components may reside within the modules 3, 5 15.

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DRAWINGS PAGE 1 of 1

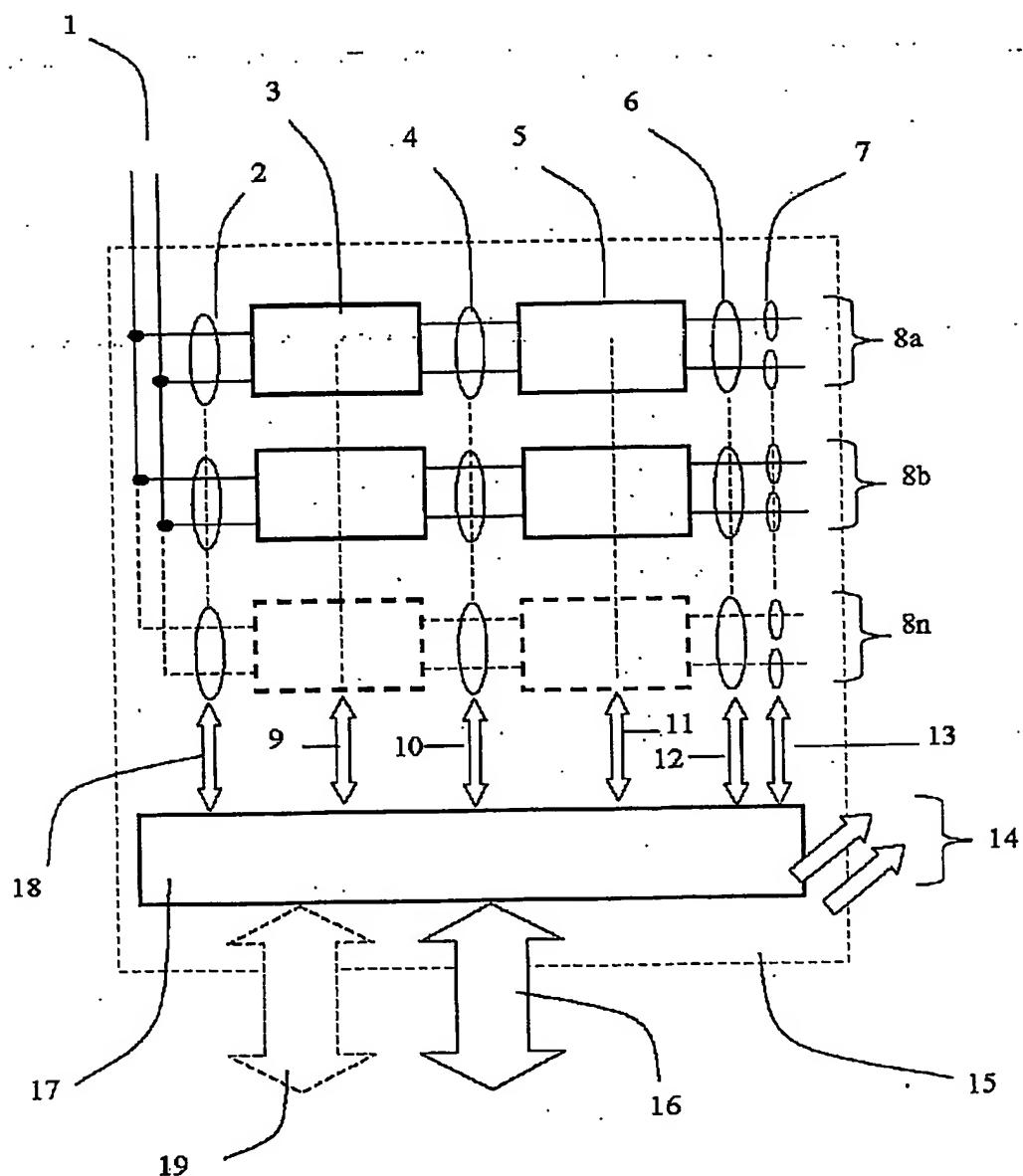


FIGURE 1

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